

CURRENT COMPLEMENTARY FEEDING PRACTICE AMONG 6-23 MONTHS YOUNG CHILDREN, KEMABA WOREDA SOUTH ETHIOPIA

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ABSTRACT

Background: Appropriate infant and young child feeding practices include timely initiation of feeding of solid and semi-solid foods from age 6 months and improving the quality of foods consumed as the child gets older by increasing dietary diversity and meal frequency, while maintaining breastfeeding up 2 years. The aim of this study was to assess current feeding practice of mother's particularly exclusive breast feeding, dietary diversity and meal frequency.

Objective: To assess current complementary feeding practice in Kemba Woreda, South Ethiopia, 2014.

Methods: Community based cross sectional study was conducted among 562 mothers who have young child from 6 -23 months in Kamba Woreda by using pre tested and structured questioners. Data was analysis by SPSS version 20 .Cross tabulation and frequency distribution was conducted to measure the exclusive breast feeding, dietary diversity and meal frequency feeding practice of mothers.

Results: Among interviewed mothers 131(23.3%) fed their child above or equal four food items and the rest 431(76.7%) fed ≤ 3 food items within 24 hours preceding the survey. The dominant food groups fed their child is grain and legumes. Their meal frequency feeding practice 6(1.1%) 2-3 meals, 104(18.5%) 4-5 meals, and 250(44.5%) greeter than 5 meals feeding frequency within 24 hours. From all mothers 228(40.6%) was practice Exclusive breast feeding for six months and the rest 334(59.4%) start additional supplementary food before six months. Major reasons of respondent who start additional supplementary food before six months were perception of mother's towards breast milk is not sufficient to satisfy the Childs water demand, working outside home and lack of information on the real time initiation of additional complementary feeding.

Conclusion and Recommendation: Poor complementary feeding practice was observed in terms of dietary diversity and exclusive feeding practice even though global infant and young child feeding guidelines was implemented by government of Ethiopia more than a decade in health extension program at community level. Properly educating, advising and giving technical support for mothers on appropriate combination of local staples foods for complementary food preparation by establishing practical food demonstration classes during post-natal period and house hold level. Extending maternal leave up to 5-6 months, practical support of mothers on adapting breast milk expression feeding practice and organizing baby center in government institution and continuous health education on importance of adequate dietary diversity feeding and exclusive breast feeding should be considered to improve complementary feeding practice to optimal level in this critical periods of child development.

KEYWORDS: Complementary Feeding, Dietary Diversity, Exclusive Feeding, Kemba, Gamo Gofa

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INTRODUCTION

Background

Appropriate infant and young child feeding (IYCF) practices include timely initiation of feeding of solid

and semi-solid foods from age 6 months and improving the verity and quality of foods consumed as the child gets older, while maintaining breastfeeding (1).

Improving quality of complementary food has been cited as one of the most cost effective strategies for improving health, reducing morbidity and mortality of young children. Nearly one third of child deaths could be prevented by optimal complementary feeding practices. Approximately 50% of all childhood mortality was related to malnutrition in the first 2 years a critical window of vulnerability (2, 3, 4).

Rapid growth of infants during the first year of life and specifically the first six months postpartum requires an adequate supply of nutrients to cope with the rapid build-up of body muscles and other tissues. This critical transition period is associated with a dramatic increase in malnutrition among infants (5).

Inappropriate complementary feeding practices remain as major public health problem in many developing countries where many children are victim of the malpractice. Less than one-third of 6-23 months old children met the minimum criteria for dietary diversity, and only 50% received the minimum number of meals. When these indicators combined, called as the minimum acceptable diet, only 21% of children aged 6-23 months met the minimum criteria (6).

An estimated 6% of under-five deaths can be prevented by ensuring optimal complementary feeding among which dietary diversity and meal frequency are the most important ones, significantly contributing to the realization of Millennium Development Goal 4(7,8,9).

As study conducted in different setting the prevalence of exclusive feeding practice 85% in Sri Lanka and 44.9% in West Bengal India (10,11).when we see in Ethiopia context 51 % in Ethiopia(National prevalence),62.8% in North Ethiopia, 57.1% in Oromia Region Jima Arejo area and 71.3% in Goba Woreda (12,13,14,15).

Secondary DHS data analysis revels the minimum dietary diversity feeding practice of young child 34% in Nepalese, 15.2% in India, 41.9% in Bangladesh and 10.8 % in Ethiopia (16,17,18,7). In Ethiopia secondary data analysis's of 2011 EDHS shows that 10.8 % of mothers feed minimum dietary diversity feeding practice of young child and a community based study in north Ethiopia reveals 17.8% of mothers feed minimum dietary diversity feeding practice, 40.0% feed minimum meal frequency and the overall prevalence of appropriate complementary feeding practices was 10.75%(19).

There is limited evidence on current complementary young child feeding practices in Ethiopia particularly in Kamba Woreda, the current actual complementary feeding practice from 6 to 23 months in this critical transition period is not investigated in remote areas like Kamba Woreda ,therefore there a need to carry out research to fill this gape and to evaluate the Ethiopian Infant and Young Child Feeding (IYCF) Practices implemented by Health Extension workers and Health professional at grass root level.

METHODS AND MATERIALS

Study Setting and Source Population

This study was conducted in Kamba Wored which is located in Southern parts of Ethiopia. The southern region has an estimated 15,042,531 (20.4% of the national estimate) people. Close to 90% of the population are estimated to be rural inhabitants, while 1,545,710 or 10.3% are urban. Kamba Woreda is one of the administrative Woreda in Gamo Gofa Zone, South Ethiopia 605 kms away from Addis Ababa. From the total population around 44,000 are women in reproductive age group. The Health institution distribution in the Woreda is 39 health posts and 9 health centers providing

health services including maternal and child health care.

Inclusion and Exclusion Criteria

Mothers/care givers who have young children from 6 to 23 months old who live in the selected Keble for at list 6 months were included in the study and those who had mental illnesses interfering the interview were not considered in study.

Sample Size Determination

Single population proportion formula was used to determine sample size by taking the prevalence of exclusive breast feeding practice at six months (P)-57.1% which is the prevalence of exclusive breast feeding for six months in south west Ethiopia 2013(14) and the prevalence of minimum dietary diversity feeding practice 17.8% (19) desired precision (d) =5% and 95% confidence level.

$$N = \frac{Z^2 \cdot P \cdot (1 - P)}{d^2}$$

After calculating the two prevalence of the final sample size was taken from exclusive breast feeding practice since it gives maximum sample size by taking 1.5 design effect and 5% none response rate which is 567.

Sampling Methods and Procedure

Eight Keble was selected by using lottery method. Study participant was allocated for each Keble based on proportional to population size allocation methods by using community based demographic and Health related information registration as the sampling frame. Censuses were conducted first to identify the target House hold. Finally infant-mother pairs were selected from each Keble by using simple random sampling methods after giving code for each House Hold.

Data Collection Procedure and Quality Control

Pre-tested structured questionnaire adapted from different literature was used to collect on socio demographic, dietary diversity and exclusive breast feeding practice. Pre test was conducted outside the selected kebeles before actual data collection. Sixteen Grade 12 completed students were recruited as data collectors and supervised by 4 Nurse. Data on dietary diversity and meal frequency was collected by allowing participant (mothers) freely to recall the number of meal frequency and food Varity consumed within 24 hours. Then the data collectors records the child dietary diversity statues with the help of 7 Item questions developed for infant and young child feeding practice (IYCF) guide line developed by WHO and adapted by Ethiopia government in 2004 for implementation.

Intensive training was given on the aim of the research, content of the questionnaire, and how to conduct interview for data collectors and supervisor to increase their performance in field activities. Data was checked every day by supervisors and principal investigator for its completeness and consistency to insure the quality of data.

Data Analysis and Management

Epi info version 3.5.1 was used for data entry and exported to SPSS Version 20 for analysis. Missing values checked by conducting simple frequency analysis. Descriptive Frequencies were calculated to describe the study population in relation to relevant variables. Different component of complementary feeding practice were like Exclusive feeding practice, dietary diversity practice and meal frequency feeding practice were assessed descriptively based on WHO infant young child feeding practice recommendation indicators and related publish journals for programmatic evaluation

purpose.

Operational Definition and Definition of Terms

- **Exclusive Breast Feeding Practice**-it is measured when mothers were initiate additional supplementary food for young child at six months along with continued breast feeding (1, 20).
- **Dietary Diversity**-is the number of reported different foods items consumed by a child within 24 hours in a household. This does not include food group consumed outside home. It is classified as low < 3 food items ≥ 4 food items considered as sufficient or adequate based on WHO infant and young child feeding practice (IYCF) guide line (1,19,20).
- **Meal Frequency**- Proportion of breastfed and non breastfed children aged 6–23 months who received solid, semi solid, or soft foods (but also including milk feeds for non-breastfed children) with the minimum number of 2 and 3 times for those breastfed infants and children aged 6–23 months and 4 times for non breastfed infants and children aged 6-23 months, respectively (19,20).
- **Complementary Feeding**- is the period (between 6-23 months) during which foods or liquids are provided along with continued breastfeeding (1, 20).

Ethical Consideration

The proposal was submitted to the Research ethics committee (REC) of Addis continental institute of Public Health. Ethical clearance was obtained from Addis continental institute of Public Health. Permission letter was obtained from Kameba Woreda Health office. Verbal informed consent from each study participant was obtained after clear explanation about the purpose of the study. All the study participants were reassured that they would be anonymous. Names or any personal identifiers were not recorded. Respondents were clearly told about the study and the variety of information needed from them.

RESULT

Socio-Demographic Characteristics of the Mothers and Young Child

From sampled women 567 sampled mothers were participated in the study with makes 99.11% response rate. Above half 53% were in age range from 6 months to 1 years and 273(48.6) were male and 289(51.4) were female with six ratio of 0.94. Almost half of the mothers, 271(48.2%) were in age range 25-29 years. From all respondents 30.3% were have no formal educational. The region distribution of the respondents 348 (60.9%) were protestant followers and rest were orthodox and Muslims (Table 1).

Table 1: Socio-demographic Characteristics of Mothers, who had Infant Aged from 6 to 23 Months, who live in Kamba Wored, 2014

Variables	Frequency No	Frequency Percent (%)
Age of child		
6-8 months	125	22.2
9-12 months	172	30.6
13-17 months	119	21.2
18-24 months	146	26.0

Sex of child		
Male	273	48.6
Female	289	51.4
Residence of mother		
Rural	205	36.5
Urban	357	63.5
Age of mother		
15-19	88	15.7
20-24	151	26.9
25-29	271	48.2
>=30	52	9.3
Religion statues		
Orthodox	197	35.1
Protestant	348	61.9
Muslim	17	3.0
Education		
No education		
Primary	173	30.8
Education	202	35.9
Secondary & above	187	33.3
Monthly average income		
<500 EBR	457	81.3%
≥500 EBR	105	18.7%
Grow vegetable		
Yes	305	54.3%
No	257	45.3%
Having cow that give milk		
Yes	215	38.3%
No	347	61.7%

Dietary Diversity, Meal Frequency and Exclusive Breast Feeding Practice in Kemba Woreda

Among all interviewed mothers 131(23.3%) fed their child greater than equal four food items and the rest 431(76.7%) fed ≤ 3 food items within 24 hours preceding the survey. The dominant food groups fed their child are grain and legumes but low feeding practice observed in animals source foods (eggs, diary and meat), fruit and vegetables as well as vitamin A reach foods (Figure 1). Their meal frequency feeding practice 1.1% fed 2-3 meals, 18.5% fed 4-5 meals, and 44.5% greater than 5 meals feeding frequency within 24 hours.

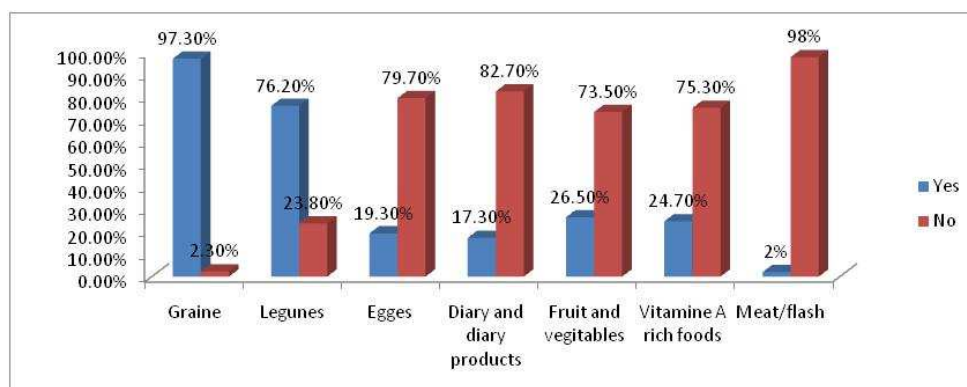


Figure 1: The Dietary Diversity Feeding Practices of Mothers for their Young Child in Kamba Woreda in 2014

From interviewed mothers 228(40.6%) was practice Exclusive breast feeding for six months and the rest 334(59.4%) start additional supplementary food before six months. Reasons of respondent who start additional supplementary food before six months were perception of mother's towards breast milk is not sufficient to satisfy the Childs water demand, working outside home and lack of information the on real time of initiation of additional complementary feeding (Figure 2).

Majority (92%) mothers start complementary feeding by liquid (milk and water) and semi solid (Porridge) diet for their child and the rest feed bottled, special prepared diet for child only and family diet.

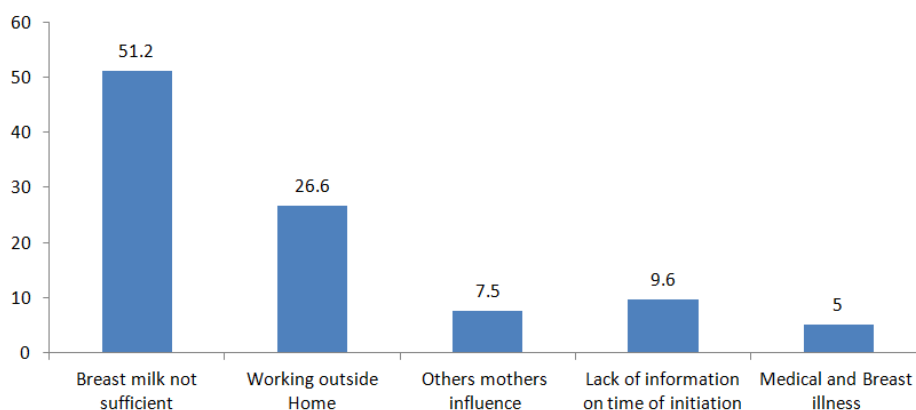


Figure 2: Reasons of Mother's Starting Additional Supplementary Food before Six Months, among Mothers Who Have 6-2 Year's Young Child in Kamba Woreda, in 2014

DISCUSSIONS

The main problems that investigated by the present study was low rates of exclusive breast feeding by introducing water and 'milk other than breast milk' to breastfed babies before six months and low dietary diversity feeding practice like Giving mainly grain and legume based food items were the potential gap identified in the study area.

The prevalence of minimum dietary diversity feeding practice of mothers who feed their child above or equal four food items within 24 hours preceding the survey was 131(23.3%) which is higher than national prevalence 10.8%(7) and relatively higher from recent study conducted in India 15.2%(17), North Ethiopia Mekele 17.8% (19), but it far from WHO recommendation (70%) and relatively lower than from finding in Nepalese 34.4%(16),in Bangladesh 41.9%(18).The possible explanation for this variations in the prevalence of dietary diversity feeding practice have been observed and direct comparisons is difficult because of differences in methodology (the current study was conducted by primary data source and the previous were utilize secondary data source(7,16,17,18)), study setting (this study conducted both in rural and urban community ,but the north Ethiopia conducted only in urban setting (19)), nature of study population, timing of the study, and related socioeconomic factors. This low dietary diversity feeding practice of mothers for their young child result micronutrient deficiency due to poor feeding practice of animal source foods like eggs (19.3%), diary and diary products (17.3%) and meat (2%) as the result of this study shows. Even though Ethiopian government implemented through its Health extension programs by adapting WHO infant and young child feeding (20) practice guide line but the achievement is not satisfactory in dietary diversity feeding practice which is a core feeding practice for the wellbeing of a child (1,16,20).

The current study revel that minimum meal frequency feeding practice was 1.1% feeds 2-3 times per 24 hours and

the rest feed above this feeding frequency which is better than finding from Nepalese which is 30.4% and Ethiopia 10.8 %.The possible justification for this finding in the current study majority of the mothers 59.6% start additional supplementary food before six months as compared to from the previous study (9, 16).

Exclusive breast feeding practice is 40.4 %. This finding is relatively lower in this study setting as compared to with Sri Lanka which is 85%(9),Ethiopia(National prevalence 51%)(12), North Ethiopia Mekelle town 62.8%(13), Oromia Region Jima Arejo 57.1%(14), south west Ethiopia Goba Woreda 71.3% (15) and consistent West Bengal India (44.9%)(10).These relatively lower prevalence of exclusive breast feeding practice for six month duration can be explained the present study was conducted in area where one forth mothers(26.6%) involved in outside work activity and stay long time away from home for work purpose. These enforce mothers to give fluid based liquid including water and others semi-solid locally prepared food before six months due to fear of breast milk alone is not sufficient to satisfied water demand of the child (14,15,21,22,).The major reason explained by mothers who start additional supplementary food before six months were perception of mother's towards breast milk is not sufficient to satisfy the Childs water demand (51.2%), working outside home (26.6%), lack of information the real time of initiation of additional complementary feeding (9.6%) and the influence of others mothers were the major reason identified. This finding is supported by different study conducted in south west and North Ethiopia (14,15,19).

CONCLUSIONS

A large proportion of young child do not fed minimum dietary diversity and start additional supplementary food before 6 months, despite what is recommended in the National and Global infant and young child feeding (IYCF) guidelines. The mean reason identified for starting additional complementary food before six months were perception of mothers on breast milk is not sufficient to satisfy the Childs water demand and followed by working outside Home were the major reasons. Therefore the current young child feeding practice is not satisfactory since mothers had poor practice e towards dietary diversity and Exclusive breast feeding practice which is core feeding practice for a child growth and development.

RECOMMENDATION

For Mothers and Care Givers

- Mothers should practice to feed their young child by mixing different local staples for complementary food for children of six months and above.
- Mothers who work outside home adopt workplace breastfeeding practices and breast milk expression in cup and to feed the child at home when mother move outside home.

For Health Extension Workers and Health Professional

- Mothers should be properly educated on the appropriate combination of local staples for complementary food for children of six months and above through practical food demonstration classes during post-natal and house hold level
- Give advice and technical support to develop and practice breast milk expression in cup and to feed the child at home when mother away from home.
- Health professional should give focus to advice and counsel mothers on dietary diversity and timely initiation of

complementary feeding.

For Government (Policy Makers)

- Government media should make advertising on dietary diversity and exclusive breast feeding importance for a child growth and development..
- Extend maternal leave from 5-6 months to achieve optimal complementary feeding

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Authors' Contribution

EA: Initiated the research, wrote the research proposal, conducted the research, did data analysis and wrote the manuscript. DM: Involved in the write up of methodology of proposal and research work.

Abbreviation

EDHS -Ethiopia Demographic and Health Survey, IYCF -Infant and Young Child Feeding, SNNPR -Southern Nations, Nationalities, and People's Region, WHO- World Health Organization

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